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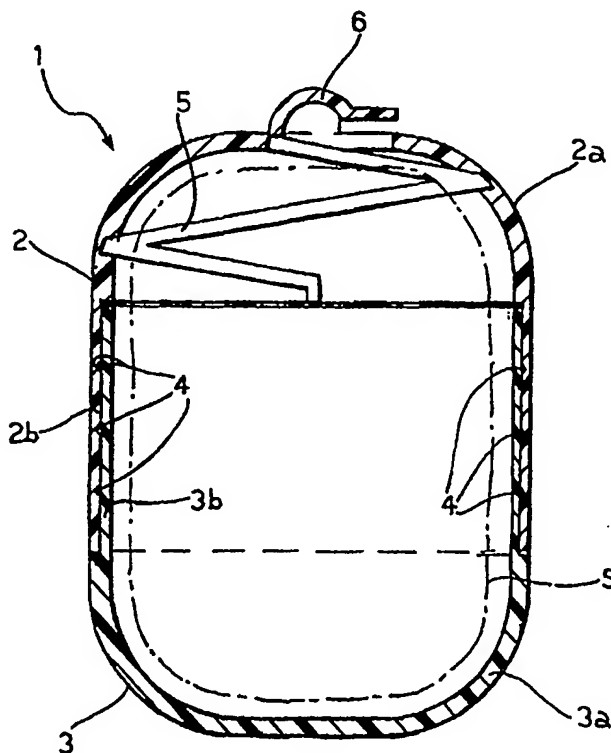
## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(71) Applicant (for all designated States except US): L'AIGLON S.A. [CH/CH]; 45A, route des Acacias, CH-1227 Carouge (CH).		<b>Published</b> <i>With international search report.</i>	
(72) Inventors; and			
(75) Inventors/Applicants (for US only): VACCARELLA, Paolo [IT/IT]; Via Dalla Chiesa, 11, I-10023 Chieri (IT). DE BONA, Gian, Carlo [IT/IT]; Via Castelfidardo, 11, I-20121 Milano (IT). NEGRI, Mario [IT/IT]; Corso Enotria, 23, I-12051 Alba (IT).			
(74) Agents: BOSOTTI, Luciano et al.; Jacobacci & Perani S.p.A., Corso Regio Parco, 27, I-10152 Torino (IT).			

(54) Title: A CONTAINER, PARTICULARLY FOR SURPRISES AND SIMILAR ARTICLES, FOR EXAMPLE FOR CHOCOLATE EGGS

## (57) Abstract

The container (1) comprises two half-shells (2, 3) coupled together in a frontal engagement condition in correspondence with the respective skirt parts (2b, 3b). In the cap part (2a) of one of the half-shells is provided an easy tear line (5) having a helical and spiral path. After packaging, the container (1) can be opened by exerting an axial pull on a gripping formation (6) provided at the vertex of the cap (2a) grooved by the easy tear line (5). The pulling action causes tearing of the said cap (2a) along the said line (5) with consequent possibility of access to the product (S) which is located in the container.



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A CONTAINER, PARTICULARLY FOR SURPRISES AND SIMILAR  
ARTICLES, FOR EXAMPLE FOR CHOCOLATE EGGS

The present invention relates to containers for products such as surprises and similar articles, for example for chocolate eggs, according to the preamble of Claim 1.

Containers of this type are widely known in the art such as, for example, from Italian industrial utility models Nos. IT-U-163428, IT-U-167969, IT-U-210696 as well as from PCT patent applications numbers PCT/EP92/01285 and PCT/EP92/01407.

Such containers must satisfy different constructional, functional and use requirements which are at least to some extent conflicting with one another.

In the first place the container (within which a so-called surprise is located, usually constituted by a small toy, a necklace or similar play object, possibly to be assembled) must be both easy to fill and to assemble (that is to say to close).

In the second place, once assembled and sent on to the transfer and manipulation operations which lead to its introduction into the product with which the container is to be associated (for example a chocolate egg) the container must be capable of being conveyed easily in an automatic manner; above all it must not accidentally come open releasing its contents.

Finally, once extracted from the product, the container must be openable easily to allow access to its contents.

The object of the present invention is to provide a container of the above-specified type which satisfies all the above-indicated requirements in an excellent manner.

According to the present invention this object is achieved by a container having the characteristics set out specifically in Claim 1. Advantageous developments of the invention form the subject of Claims 2 to 15.

The invention will now be described, purely by way of non-limitative example, with reference to the attached drawings, in which:

Figures 1 to 3 are three perspective general views which illustrate a container according to the invention, respectively in the condition prior to assembly, in the assembled condition and during the opening operation; and

Figure 4 is an axial section, on an enlarged scale, of a container according to the invention.

In the attached drawings the reference numeral 1 generally indicates a container for surprises and similar articles which can be utilised, for example, for introduction to the interior of a chocolate egg and similar food products.

For a general illustration of the structure and the criteria of use of such containers

reference can usefully be made to the preceding patent documents cited in the introduction to the present specification.

In one arrangement known per se the container 1 is constituted by two half-shells 2, 3 both having a generally cup-shape configuration, both being constituted, respectively, by a cap part 2a, 3a and a collar or skirt part 2b, 3b.

The said skirt parts 2b, 3b constitute formations which can be coupled together in engagement conditions in a generally male and female configuration.

In the illustrated embodiment the skirt part 3b of the half-shell 3 which is in a lower position in the drawing has diametral dimensions slightly less than those of the skirt part 2b of the other half-shell. More specifically, making reference to the exemplary embodiment illustrated here, in which it is arranged that the skirt parts 2b, 3b have a cylindrical shape (they could also have a polygonal or mixtilinear shape) it is arranged that the outer diameter of the skirt part 3b corresponds in practice to the inner diameter of the skirt part 2b.

This means that, in fact, the skirt part 3b of the half-shell 3 can be inserted or engaged within the skirt part 2b of the half-shell 2 with an interference fit sufficient to prevent an easy relative separation of the two half-shells.

The interference coupling between the two half-shells 2, 3 can be made more secure

by the presence of complementary formations schematically indicated here in the form of annular ribs 4 extending in a circumferential direction around the outer surface of the skirt part 3b and intended to cooperate forcibly against the inner surface of the skirt part 2b of the half-shell 2. All this also possibly providing the inner surface of the skirt part 2b with annular grooves intended to be snap engaged by the ribs 4.

An important characteristic of the arrangement according to the invention is given by the extent of the cooperating skirt parts 2b and 3b, which are relatively long in the axial direction with respect to the container 1, that is to say in the coupling direction of the two skirt parts 2b, 3b.

Preferably, the said extent, over the region in which the two skirt parts 2b, 3b are engaged over one another, is equal to about 1/3 or more (certainly not less than about 1/3) of the overall axial extent of the container 1. In the currently preferred embodiment this corresponds to each skirt part 2b, 3b having an axial dimension, in the region intended to be engaged with the corresponding portion of the other half-shell, at least slightly greater than the corresponding dimensions of the respective cap parts 2a, 3a.

The above is true in terms of relative dimensions. In absolute terms tests conducted by the Applicant demonstrate that the choice of axial extent of the mutually cooperating skirt parts 2b, 3b of the order of about 1.5 - 2.5 cm is particularly advantageous.

This compares with a diameter of the container 1 of the order of about 3 - 3.5 cm.

The choice of these dimensional characteristics, whilst not being essential, has been shown to be particularly advantageous in combination with the choice of different plastics materials for the production of the two half-shells. For example, a particularly useful choice has been found to be that of polypropylene for the production of the half-shell 3 (defining the male part of the coupling between the two half-shells) and polyethylene for the production of the half-shell 2 (defining the female part of the coupling).

In these conditions the Applicant has been able to determine that, once the surprise S has been introduced (the shape of which is schematically indicated with broken outline only in Figure 4), the container 1 can be easily closed by aligning the two half-shells with their respective open ends facing one another and then exerting a rapid thrust in the direction which causes penetration of the skirt part 3b into the interior of the skirt part 2b.

In comparison with this ease of coupling the mutual retention action which becomes established between the two half-shells 2, 3 and which resists any action of axial separation of the two is sufficiently firm as to make uncoupling of the two half-shells by manual traction difficult, which in fact makes accidental opening of the container impossible.

Whilst not wishing to be tied down to any specific theory in this regard the Applicant has reason to think that the relative ease of coupling and the significant difficulty of uncoupling derives in the first instance from the fact that, to perform the coupling action upon engagement an action is provided (and made possible) based on a relatively rapid displacement, which is not in general possible in an attempt at opening performed by applying a manual pull.

It is therefore possible to affirm that, once coupled together the two half-shells 2 form a closed casing which can no longer be opened unless acting with significant mechanical forces or with a cutting action on the body of the container.

Access to the surprise S which is located in the container is made possible by the fact that one of the cap parts (in the illustrated embodiment the cap 2a of the "female" half-shell 2) is provided with an easy tear line 5. The line 5 extends in a helically spiral path practically over the whole of the said cap part 2a and leads to a terminal projection 6 disposed at the top or apex of the cap 2a.

By gripping the projection 6, which preferably has the shape of a projecting tongue, as schematically illustrated in Figure 3, and exerting on it a pull in an axial direction with respect to the container 1, in the direction away from it, it is possible to produce the gradual tearing of the cap 2a along the easy tear line 5. This makes the surprise S accessible from the outside.



The easy tear line 5 has been schematically illustrated in the attached drawings in the form of a groove or impression defining a zone of smaller thickness, formed in the cap part 2a preferably on the inner face thereof.

Naturally, the same result can be obtained with a functionally equivalent arrangement. It has been found to be particularly advantageous, for example, to provide an easy tear line 5 constituted by a series of perforations in the cap 2a aligned along a helically spiral path entirely like that illustrated here with reference to the tear line 5.

Preferably the cap 2a is made with a thickness such that on the one hand the tearing action is achieved in a certain and easy manner in correspondence with the easy tear line 5 and, on the other hand, once the tear is completed the tongue which is at the end of the torn part of the cap 2a along the line 5 is not easily breakable or separable from the half-shell 2 and in any event from the container 1 as a whole.

The arrangement described makes it possible to ensure that the coupling force between the two half-shells 2, 3 is always substantially greater than the traction force which it is necessary to apply to the gripping formation 6 to obtain tearing of the cap 2a along the line 5, and that a possible further traction force subsequently applied will not produce the uncoupling of the two half-shells 2, 3.

Naturally, the principle of the invention remaining the same, the details of the construction and the embodiments can be widely varied with respect to what has been

described and illustrated, without by this departing from the ambit of the present invention.

## CLAIMS

1. A container for products (S) such as surprises and similar articles, comprising two half-shells (2, 3) having a generally cup-shape configuration with a cap part (2a, 3a) and a skirt part (2b, 3b) which can be coupled in a frontal engagement relationship at said skirt parts (2b, 3b) characterised in that:

- the said skirt parts (2b, 3b) have, in the mutual coupling zones, a substantial extent in the coupling direction of the two half-shells (2, 3,) and,
- at least one of the said half-shells (2) is provided at its cap part (2a) with an easy tear line (5),

the arrangement being such that the container can be assembled by engaging the said skirt parts (2b, 3b) so as to enclose a said product (S) in its interior, and the said product (S) can be subsequently extracted from the container (1) by causing tearing of the said at least one half-shell (2) along the said easy tear line (5).

2. A container according to Claim 1, characterised in that the said extent of the said skirt parts (2b, 3b) in the mutually coupling position is not less than about one third of the corresponding overall extent of the container and/or lies between about 1.5 and about 2.5 cm.

3. A container according to Claim 1 or Claim 2, characterised in that the skirt part (3b) of one of the said half-shells (3) has outer diametral dimensions substantially corresponding to the inner diametral dimensions of the skirt part (2b) of

the other half-shell (2) such that the said two half-shells (2, 3) are connectable together by the effect of the coupling of the said skirt parts (2b, 3b) with a generally male and female configuration.

4. A container according to Claim 3, characterised in that at least one (3b) of the said skirt parts (2b, 3b) has retaining formations (4) which, in the assembled container, project towards the skirt part (2b) of the other said half-shell (2).

5. A container according to Claim 4, characterised in that the said retaining formations are made in the form of ribs (4) extending circumferentially with respect to the skirt part (3b) of the respective half-shell (3).

6. A container according to any preceding claim, characterised in that the said skirt parts (2b, 3b) achieve, in the assembled container (1), a coupling force between the two half-shells (2, 3) greater than the force which causes tearing of the said cap part (2a) of the said at least one half-shell (2) along the said easy tear line (5).

7. A container according to any preceding claim, characterised in that the said easy tear line (5) is constituted by a region of reduced thickness of the cap part (2a) of the said at least one half-shell (2).

8. A container according to any of claims from 1 to 6, characterised in that the said easy tear line (5) is constituted by aligned holes provided in the said cap part (2a)

of the said at least one half-shell (2).

9. A container according to any preceding claim, characterised in that the said easy tear line (5) extends over the respective cap part (2a) along a generally helical and spiral path.

10. A container according to any preceding claim, characterised in that the said cap part (2a) of the said at least one half-shell (2) has an apex part (6) constituting a gripping formation which can be gripped to cause tearing of the said cap part (2a) of the said at least one half-shell (2) along the said easy tear line.

11. A container according to Claim 10, characterised in that the said gripping formation (6) is located in an apex position with respect to the respective cap part (2a).

12. A container according to any preceding claim, characterised in that the said two half-shells (2, 3) are made of plastics material.

13. A container according to Claim 12, characterised in that the two half-shells (2, 3) are made of different plastics materials, the half-shell (2) having the said easy tear line (5) in its cap part (2a) being made of a plastics material at least slightly softer than the plastics material of the other half-shell.

14. A container according to any preceding claim, characterised in that the said

half-shell (2), provided in correspondence with the respective cap part (2a) with the said easy tear line (5), has a skirt part (2b) which, in the assembled container (1), surrounds the skirt part (3b) of the other half-shell (3).

15. A container according to Claim 12 or Claim 13, characterised in that the half-shell (2) provided in correspondence with its cap part (2a) with the said easy tear line (5) is made of polyethylene, whilst the other half-shell (3) is made of polypropylene.

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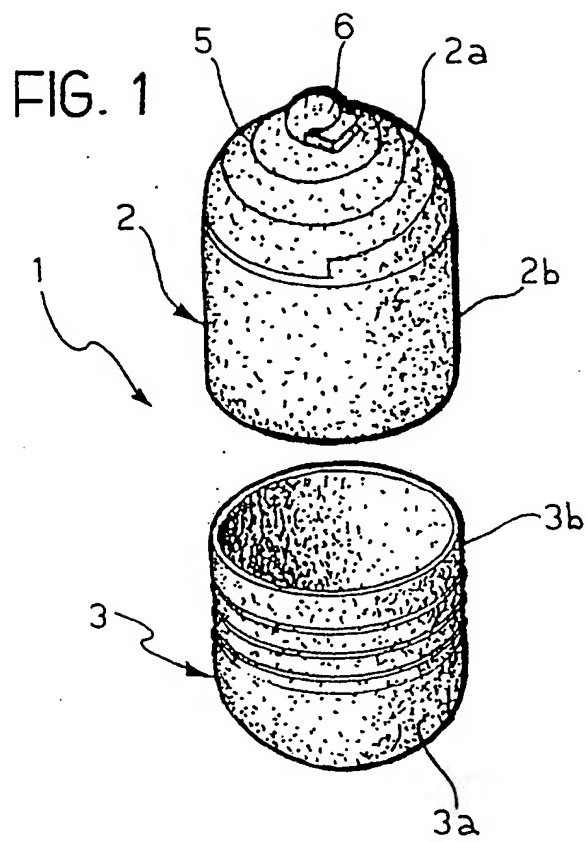
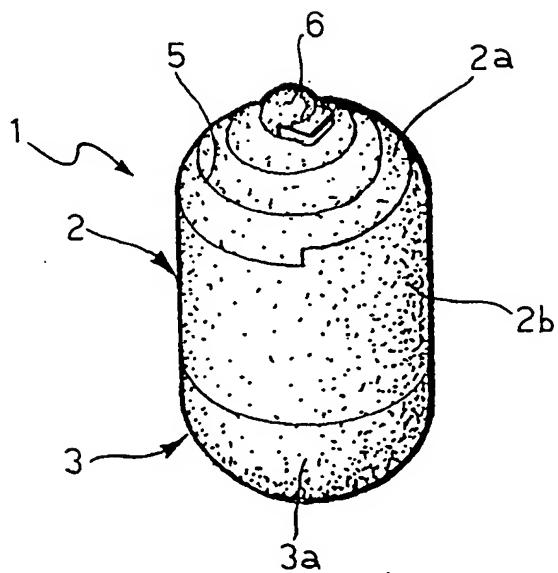
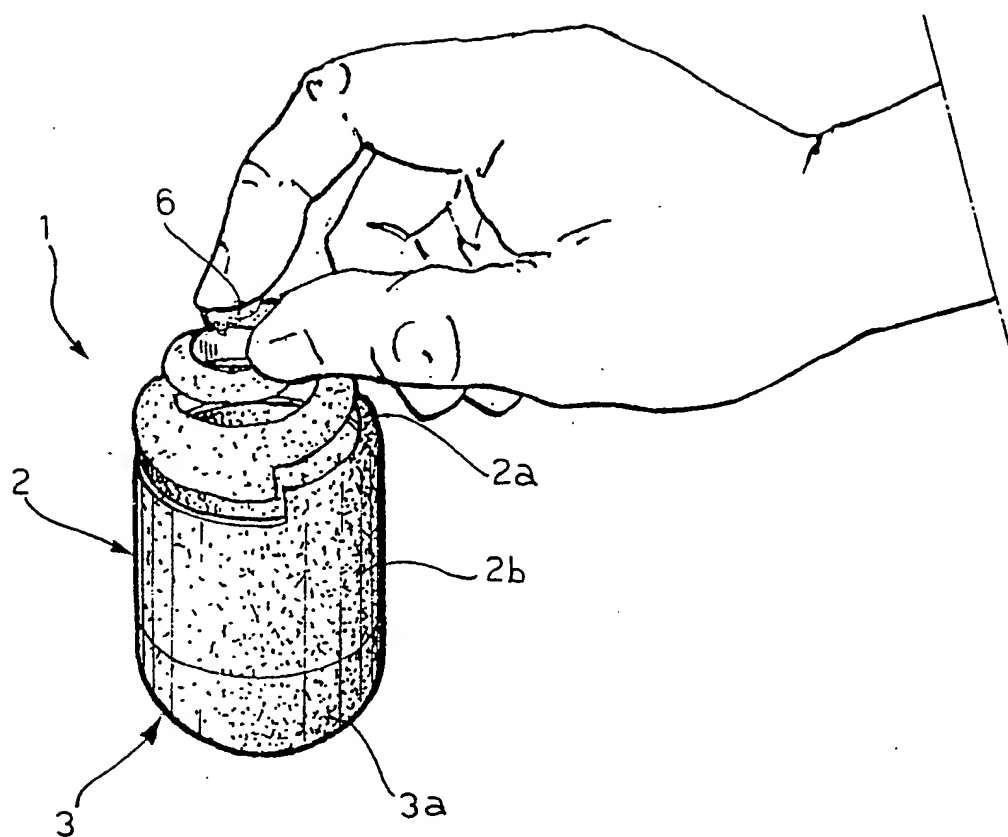


FIG. 2



2/3

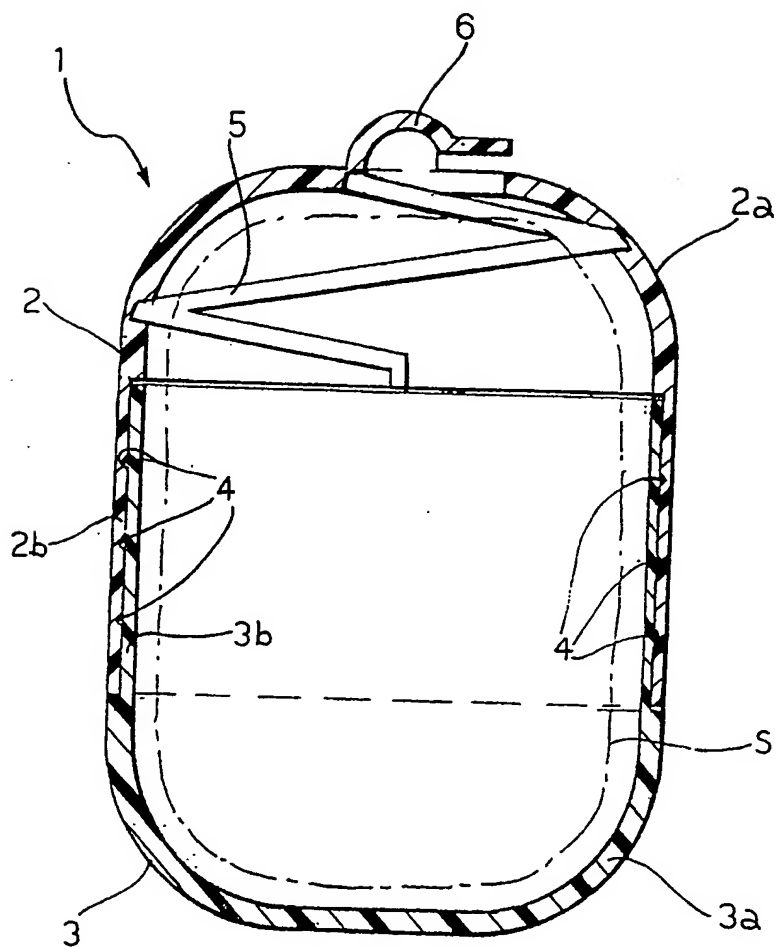
FIG. 3





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FIG. 4



## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 95/01326

A. CLASSIFICATION OF SUBJECT MATTER  
 IPC 6 B65D8/04 B65D17/34

According to International Patent Classification (IPC) or to both national classification and IPC.

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO,A,93 00267 (FERRERO) 7 January 1993 cited in the application see abstract; claims; figures ---	1-5,12
A	US,A,4 682 702 (GACH) 28 July 1987 see column 4, line 26 - line 32; figure 10 ---	1,7,9,10
A	DE,A,22 57 459 (ECKARDT KG PFANNI WERK OTTO) 6 June 1974 -----	

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Authorized officer

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## INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No

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